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UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY—Circular No. 104

COMMERCIAL STOCKS OF FERTILIZER AND FERTILIZER MATERIALS

IN THE UNITED STATES AS REPORTED FOR OCTOBER 1, 1917

Contribution from the Bureau of Markets
CHARLES J. BRAND, Chief

WASHINGTON, FEBRUARY 28, 1918

THE RETURNS from the War Emergency Fertilizer Survey of October 1, 1917, show an increase, compared with 1916, in the commercial stocks of potash, sulphate of ammonia, acid phosphate and phosphate rock. On the other hand, a material decrease is to be noted in the case of nitrate of soda, mixed fertilizers, dried blood, slaughterhouse tankage and garbage tankage. Stocks of sulphuric acid, sulphur and pyrites (foreign and domestic) in the hands of concerns reporting were smaller on October 1, 1917, than on October 1, 1916.

Detailed information based on the returns from the survey is given in the following pages with reference to cottonseed meal and cake, raw bone, steamed bone, fish scrap, cyanamid and base goods, as well as the items above mentioned. The data presented cover imports and production as well as stocks on hand.

COMMERCIAL STOCKS OF FERTILIZER AND FERTILIZER MATERIALS.

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THIS CIRCULAR presents information obtained through the War Emergency Fertilizer Survey of October 1, 1917, regarding 19 important materials used for fertilizer purposes.

Tables 1, 2, 3, 4 and 5 show, respectively, stocks on hand and in transit; quantities under contract or option for delivery before April 1, 1918; comparative figures, based on returns from concerns reporting for both 1917 and 1916; imports; and production.

Diagrams 1 and 2 show the stocks reported for October 1, 1917, and October 1, 1916. Diagrams 3 and 4 show the imports of nitrate of soda and of pyrites, sulphur, cyanamid, and potash; Diagram 5 shows the production of mixed fertilizers, acid phosphate, and phosphate rock in 1917, and the estimated capacity for production in 1918.

NITRATE OF SODA.

Returns from 467 firms showed 124,388 tons of nitrate of soda on hand and 12,695 tons in transit. Two hundred and seventy-three firms reported 351,151 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports for 379 firms, showed 1917 stocks 15.2 per cent less than those of 1916. Imports of 996,540 tons in 1917 were reported by 17 firms, which estimated that they would import slightly less in 1918.

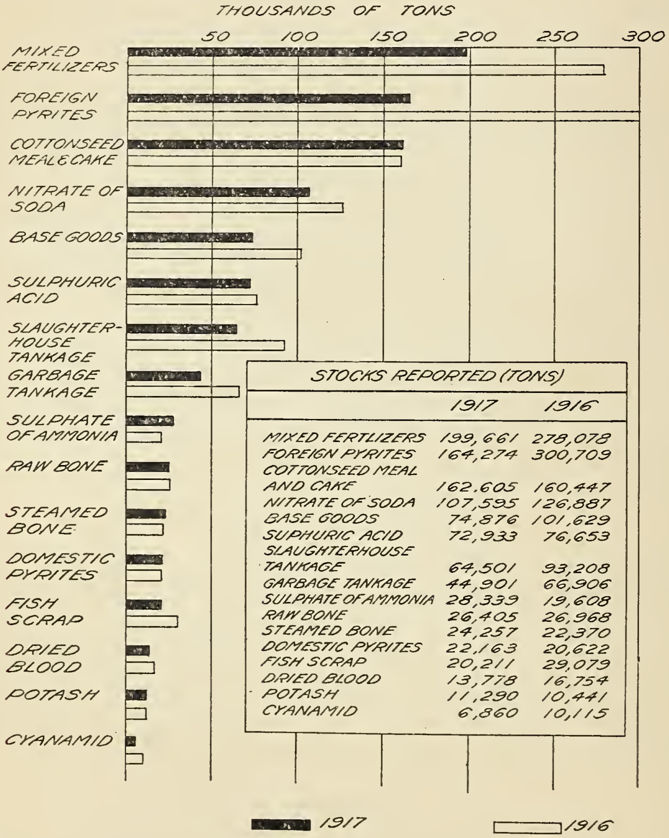
POTASH.

Potash salts and materials were reported in pounds of potassium oxide (K_2O) contained therein. On this basis, the returns from 315

NOTE.—The material in this circular was collected and prepared under the direction of Mr. C. W. Thompson and Mr. D. S. Murph, of the Bureau of Markets.

firms showed stocks amounting to 23,152,725 pounds on hand on October 1, 1917, and 149,322 pounds in transit. One hundred and seventy firms reported 27,288,075 pounds under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 293 firms, showed that the 1917 holdings were 8.0 per cent larger than those of 1916. Imports of 2,988,784 pounds were reported for 1917 by 10 firms, which estimated that they would import more than twice as much in 1918. The 12 firms reporting manufactures showed 4,400,762 pounds for 1917, with an estimated manufacturing capacity of 8,062,392 pounds for 1918.

Diagram 1.—Total Stocks of Fertilizer Reported for October 1, 1917, and for October 1, 1916.



STOCKS REPORTED (TONS)

	1917	1916
MIXED FERTLIZERS	199,661	278,078
FOREIGN PYRITES	164,274	300,709
COTTONSEED MEAL AND CAKE	162.605	160,447
NITRATE OF SODA	107,595	126,887
BASE GOODS	74,876	101,629
SUPHURIC ACID	72,933	76,653
SLAUGHTERHOUSE TANKAGE	64,501	93,208
GARBAGE TANKAGE	44,901	66,906
SULPHATE OF AMMONIA	28,339	19,608
RAW BONE	26,405	26,968
STEAMED BONE	24,257	22,370
DOMESTIC PYRITES	22,163	20,622
FISH SCRAP	20,211	29,079
DRIED BLOOD	13,778	16,754
POTASH	11,290	10,441
CYANAMID	6,860	10,115

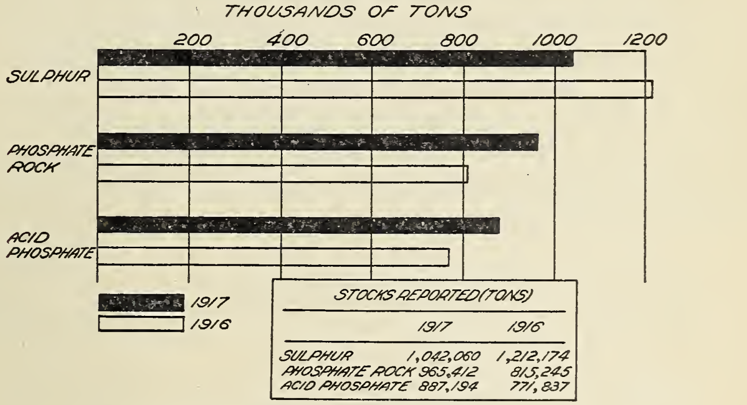
SULPHURIC ACID.

Returns from 158 firms showed 74,888 tons of sulphuric acid (calculated to 50° Baumé) on hand and 1,455 tons in transit. Sixty-six firms reported 253,680 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 145 firms, showed 1917 stocks 4.9 per cent less than those of 1916. The 93 firms reporting manufactures produced 1,455,529 tons in 1917 and estimated a capacity of 1,648,971 tons for 1918.

SULPHATE OF AMMONIA.

Returns from 215 firms showed 31,510 tons of sulphate of ammonia on hand and 463 tons in transit. One hundred and twenty firms reported 82,065 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 181 firms, showed 1917 stocks 44.5 per cent larger than those of 1916. Only one firm reported imports, the amount being 200 tons, with an estimate of 300 tons for the amount to be imported in 1918. The 9 firms reporting manufactures produced 20,250 tons in 1917 and estimated a slightly larger capacity for 1918.

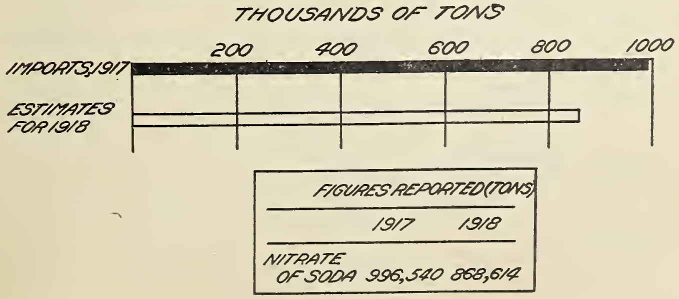
Diagram 2.—Total Stocks of Fertilizer Reported for October 1, 1917, and for October 1, 1916.



STOCKS REPORTED (TONS)

	1917	1916
SULPHUR	1,042,060	1,212,174
PHOSPHATE ROCK	965,412	815,245
ACID PHOSPHATE	887,194	771,837

Diagram 3.—Imports of Nitrate of Soda.



FIGURES REPORTED (TONS)

	1917	1918
NITRATE OF SODA	996,540	868,614

SLAUGHTERHOUSE TANKAGE.

Reports from 702 firms showed 67,194 tons of slaughterhouse tankage on hand and 3,284 tons in transit. One hundred and fifteen firms reported 34,263 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 593 firms, indicated that the 1917 stocks were 30.8 per cent less than those of 1916. Imports of 14,297 tons were reported by 4 firms, with an estimate of 9,853 tons for 1918. Reports from 430 manufacturing firms showed a production of 356,542 tons, with an estimated capacity for 1918 slightly larger than this.

GARBAGE TANKAGE.

Returns from 190 firms showed 53,498 tons of garbage tankage on hand and 3,079 tons in transit. A total of 72,565 tons under contract or option for delivery before April 1, 1918, was reported by 83 of these firms. Comparative figures for 1917 and 1916, based on reports from 136 firms, showed 1917 stocks 32.9 per cent smaller than those of 1916. The 49 firms reporting manufactures produced 128,133 tons in 1917 and estimated a slightly larger capacity for 1918.

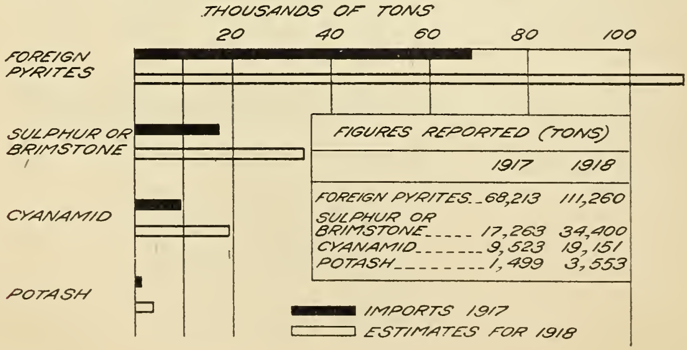
SULPHUR OR BRIMSTONE.

The 97 firms reporting sulphur or brimstone showed 1,055,855 tons on hand, and 37,283 tons in transit. Thirty-eight firms reported 114,514 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 65 firms, showed 1917 stocks 14.0 per cent less than those of 1916. Imports amounting to 17,263 tons were reported by 3 firms, with an estimate of twice this quantity for 1918. One firm reported the production of 462,011 tons of sulphur and brimstone.

FOREIGN PYRITES.

Reports from 72 firms showed 174,161 tons of foreign pyrites on hand and 1,254 tons in transit. Returns from 35 firms showed 262,360

DIAGRAM 4.—IMPORTS OF PYRITES, SULPHUR, CYANAMID, AND POTASH.



FIGURES REPORTED (TONS)

	1917	1918
FOREIGN PYRITES	68,213	111,260
SULPHUR OR BRIMSTONE	17,263	34,400
CYANAMID	9,523	19,151
POTASH	1,499	3,553

tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 68 firms, showed 1917 stocks 45.4 per cent smaller than those of 1916. Imports amounting to 68,213 tons were reported by 9 firms, with an estimate of 111,260 tons to be imported in 1918.

DOMESTIC PYRITES.

Forty-five firms reported 27,045 tons of domestic pyrites on hand and 917 tons in transit. Reports from 19 firms showed 95,473 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 38 firms, showed 1917 stocks 7.5 per cent larger than those of 1916. These firms reported the production of 32,829 tons in 1917, estimating a producing capacity of 41,459 tons for 1918.

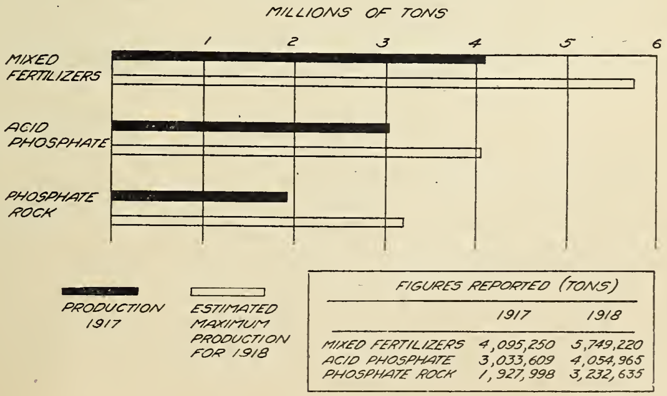
ACID PHOSPHATE.

Returns from 649 firms showed 943,815 tons of acid phosphate on hand and 12,773 tons in transit. Of these firms, 279 reported 678,722 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports for 519 firms, showed 14.9 per cent larger stocks in 1917 than in 1916. The 172 firms reporting manufactures produced 3,033,609 tons in 1917, and estimated their capacity for 1918 at 4,054,965 tons.

MIXED FERTILIZERS.

Reports from 459 firms showed 215,013 tons of mixed fertilizers on hand and 17,453 tons in transit. Only 17 firms reported mixed fertilizers under contract or option for delivery before April 1, 1918, the

DIAGRAM 5.—PRODUCTION OF MIXED FERTILIZERS, ACID PHOSPHATE, AND PHOSPHATE ROCK IN 1917, AND ESTIMATED MAXIMUM PRODUCTION FOR 1918.



FIGURES REPORTED (TONS)

	1917	1918
MIXED FERTILIZERS	4,095,250	5,749,220
ACID PHOSPHATE	3,033,609	4,054,965
PHOSPHATE ROCK	1,927,998	3,232,635

total quantity being 8,593 tons. Comparative figures for 1917 and 1916, based on reports from 380 firms, showed 1917 stocks 28.2 per cent less than those of 1916. The 446 firms reporting manufactures produced 4,095,250 tons in 1917 and estimated their capacity for 1918 at 5,749,220 tons.

COTTONSEED MEAL AND CAKE.

Reports from 695 firms showed 183,676 tons of cottonseed meal and cake on hand and 11,764 tons in transit. One hundred and sixty-six firms reported 128,545 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 560 firms, showed 1.3 per cent larger stocks in 1917 than in 1916. The 111 firms reporting manufactures produced 1,587,192 tons in 1917 and estimated a capacity of 2,162,015 tons for 1918.

DRIED BLOOD.

Reports from 261 firms showed 14,595 tons of dried blood on hand, with 115 tons in transit. A total of 5,231 tons was reported by 36 firms as under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 221 firms, showed 17.8 per cent smaller stocks in 1917 than in 1916. Imports of 7,716 tons in 1917 were reported by 4 firms. The 125 firms reporting manufactures produced 58,905 tons in 1917 and estimated a capacity of 65,435 tons for 1918.

PHOSPHATE ROCK.

Returns from 270 firms showed 1,176,112 tons of phosphate rock on hand and 36,365 tons in transit. Of these firms 113 reported 860,174 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 225 firms, showed 18.4 per cent larger stocks in 1917 than in 1916. Thirty-five firms reported the production of 1,927,998 tons in 1917 and estimated a capacity for the production of 3,232,635 tons in 1918.

RAW BONE.

Returns from 232 firms showed 28,451 tons of raw bone on hand and 803 tons in transit. Twenty firms reported 5,937 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 167 firms, showed 2.1 per cent smaller stocks in 1917 than in 1916. Imports of 14,011 tons were reported by one firm. The 163 firms reporting manufactures produced 24,336 tons in 1917 and estimated a capacity of 30,568 tons for 1918.

STEAMED BONE.

Returns from 309 firms showed 25,421 tons of steamed bone on hand and 1,392 tons in transit. Thirty-five firms reported 6,994 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on reports from 239 firms, showed 8.4 per cent larger stocks in 1917 than in 1916. Imports of 377 tons were reported by one firm, which estimated that it would import 400 tons in 1918. The 163 firms reporting the manufacture of this commodity produced 79,678 tons in 1917, and gave their manufacturing capacity for 1918 as 99,444 tons.

FISH SCRAP.

Reports from 158 firms showed 23,208 tons of fish scrap on hand and 284 tons in transit. Forty-two firms reported 15,312 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 124 firms, showed 30.5 per cent smaller stocks in 1917 than in 1916. Twenty-six firms reported the production of 19,009 tons in 1917 and estimated a capacity of 34,868 tons for 1918.

CYANAMID.

Reports from 323 firms showed 7,834 tons of cyanamid on hand and 20 tons in transit. Ninety-eight firms reported 1,592 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 111 firms, showed 32.2 per cent smaller stocks in 1917 than in 1916. Three firms reported imports of 9,523 tons in 1917.

BASE GOODS.

Reports from 147 firms showed 86,043 tons of base goods on hand and 529 tons in transit. Seventeen firms reported 12,562 tons under contract or option for delivery before April 1, 1918. Comparative figures for 1917 and 1916, based on returns from 109 firms, showed 26.3 per cent smaller stocks in 1917 than in 1916. The 35 firms reporting manufactures produced 251,874 tons in 1917, and estimated their capacity for 1918 at 341,424 tons.

TABLE 1.—*Fertilizer survey: Stocks on hand and in transit.*

[Quantities in tons of 2,000 pounds, except potash, which is stated in pounds of K_2O.]

Commodity.	Firms reporting.	Stocks on hand Oct. 1, 1917.	In transit.	Commodity.	Firms reporting.	Stocks on hand Oct. 1, 1917.	In transit.
Nitrate of soda	467	124,388	12,695	Mixed fertilizers	459	215,013	17,453
Potash (pounds)	315	23,152,725	149,322	Cottonseed meal and cake	695	183,676	11,764
Sulphuric acid	158	74,888	1,455	Dried blood	261	14,595	115
Sulphate of ammonia	215	31,510	463	Phosphate rock	270	1,176,112	36,365
Slaughterhouse tankage	702	67,194	3,284	Raw bone	232	28,451	803
Garbage tankage	190	53,498	3,079	Steamed bone	309	25,421	1,392
Sulphur or brimstone	97	1,055,855	37,283	Fish scrap	158	23,208	284
Foreign pyrites	72	174,161	1,254	Cyanamid	323	7,834	20
Domestic pyrites	45	27,045	917	Base goods	147	86,043	529
Acid phosphate	649	943,815	12,773				

TABLE 2.—*Fertilizer survey: Stocks under contract or option for delivery before April 1, 1918.*

[Quantities in tons of 2,000 pounds, except potash, which is stated in pounds of K_2O.]

Commodity.	Under contract or option for delivery before April 1, 1918.		Commodity.	Under contract or option for delivery before April 1, 1918.	
	Firms reporting.	Quantity,		Firms reporting.	Quantity
Nitrate of soda	273	351,151	Mixed fertilizers	17	8,593
Potash (pounds)	170	27,288,075	Cottonseed meal and cake	166	128,545
Sulphuric acid	66	253,680	Dried blood	36	5,231
Sulphate of ammonia	120	82,065	Phosphate rock	113	860,174
Slaughterhouse tankage	115	34,263	Raw bone	20	5,937
Garbage tankage	83	72,565	Steamed bone	35	6,994
Sulphur or brimstone	38	114,514	Fish scrap	42	15,312
Foreign pyrites	35	262,360	Cyanamid	98	1,592
Domestic pyrites	19	95,743	Base goods	17	12,562
Acid phosphate	279	678,722			

TABLE 3.—*Fertilizer survey: Comparative figures, based on returns from concerns reporting for both 1917 and 1916.*

[Quantities in tons of 2,000 pounds, except potash, which is stated in pounds of K_2O.]

Commodity.	Firms reporting.	1917 stocks.		1916 stocks.
		Quantity.	Per cent of 1916.	
Nitrate of soda	379	107,595	84.8	126,887
Potash (pounds)	293	22,581,516	108.0	20,883,404
Sulphuric acid	145	72,933	95.1	76,653
Sulphate of ammonia	181	28,339	144.5	19,608
Slaughterhouse tankage	593	64,501	69.2	93,208
Garbage tankage	136	44,901	67.1	66,906
Sulphur or brimstone	65	1,042,060	86.0	1,212,174
Foreign pyrites	68	164,274	54.6	300,709
Domestic pyrites	38	22,163	107.5	20,622
Acid phosphate	519	887,194	114.9	771,837
Mixed fertilizers	380	199,661	71.8	278,078
Cottonseed meal and cake	560	162,605	101.3	160,447
Dried blood	221	13,778	82.2	16,754
Phosphate rock	225	965,412	118.4	815,245
Raw bone	167	26,405	97.9	26,968
Steamed bone	239	24,257	108.4	22,370
Fish scrap	124	20,211	69.5	29,079
Cyanamid	111	6,860	67.8	10,115
Base goods	109	74,876	73.7	101,629

TABLE 4.—*Fertilizer survey: Imports.*

[Quantities in tons of 2,000 pounds, except potash, which is stated in pounds of K_2O.]

Commodity.	Firms reporting.	Quantity, 1917.	Estimate for 1918.
Nitrate of soda....	17	996,540	868,614
Potash (pounds) ...	10	2,988,784	7,107,854
Sulphuric acid	...	....	....
Sulphate of ammonia	1	200	300
Slaughterhouse tankage	4	14,297	9,853
Garbage tankage ...	...	....	....
Sulphur or brimstone	3	17,263	34,400
Foreign pyrites	9	68,213	111,260
Domestic pyrites ...	...	....	....
Acid phosphate	...	....	....
Mixed fertilizers ...	...	....	....
Cottonseed meal and cake	...	....	....
Dried blood	4	7,716	5,549
Phosphate rock	...	....	....
Raw bone	1	14,011	5,651
Steamed bone......	1	377	400
Fish scrap	...	....	....
Cyanamid	3	9,523	19,151
Base goods	...	....	... .

TABLE 5.—*Fertilizer survey: Manufactures (or production) and manufacturing capacity.*

[Quantities in tons of 2,000 pounds, except potash, which is stated in pounds of K_2O.]

Commodity.	Firms reporting.	Production 1917.	Capacity for 1918.
Nitrate of soda	...	....	....
Potash (pounds) ..	12	4,400,762	8,062,392
Sulphuric acid	93	1,455,529	1,648,971
Sulphate of ammonia	9	20,250	20,948
Slaughterhouse tankage	430	356,542	421,976
Garbage tankage ...	49	128,133	148,704
Sulphur or brimstone	1	462,011	462,011
Foreign pyrites	...	....	....
Domestic pyrites ...	3	32,829	41,459
Acid phosphates ...	172	3,033,609	4,054,965
Mixed fertilizers ...	446	4,095,250	5,749,220
Cottonseed meal and cake	111	1,587,192	2,162,015
Dried blood	125	58,905	45,435
Phosphate rock	35	1,927,998	3,232,635
Raw bone	102	24,336	30,568
Steamed bone	163	79,678	99,444
Fish scrap	26	19,009	34,868
Cyanamid	...	....	....
Base goods	35	251,874	341,424